NAR/HIA Model Rocketry Safety Code

1. **CONSTRUCTION**—My model rockets will be made of lightweight materials such as paper, wood, rubber, and plastic, without any metal as structural parts.
2. **ENGINES**—I will use only pre-loaded factory-made NAR Safety-Certified model rocket engines in the manner recommended by the manufacturer. I will not alter or dismantle model rocket engines or their ingredients in any way or attempt to reload these engines.
3. **RECOVERY**—I will always use a recovery system in my rockets that will return them safely to the ground so that they may be flown again. I will use only flame-resistant recovery wadding in my rockets.
4. **WEIGHT LIMITS**—My model rocket will weigh no more than 1500 grams (53 oz.) at lift-off, and the engines will contain a total of no more than 125 grams (4.4 oz.) of propellant. My model rockets will weigh no more than the engine manufacturer's recommended maximum lift-off weight for the engines used or will use the engines recommended by the manufacturer for my rocket.
5. **STABILITY**—I will check the stability of my model rockets before their first flight, except when launching models of already proven stability.
6. **PAYLOADS**—My model rockets will never carry live animals or payloads that are intended to be flammable or explosive.
7. **LAUNCH AREA**—I will launch my model rockets outdoors in a cleared area, free of tall trees, power lines, and buildings. I will ensure that people in the vicinity are aware of the pending rocket launch and are in a position to see the rocket's lift-off before I begin my audible 5-second countdown.
8. **LAUNCHER**—I will launch my model rockets from a rod or other device which provides rigid guidance until the rocket has reached a speed adequate to ensure a safe flight path. To prevent accidental eye injury, I will always place the launcher so that the end of the rod is above eye level or will cap the end of the launch rod when approaching it. I will cap or disassemble my launch rod when not in use and will never store it in an upright position. The launch device will have a jet deflector to prevent the engine exhaust from hitting the ground directly. I will always clear the area around my launch device of brown grass, dry weeds, and other easy-to-burn materials.
9. **IGNITION SYSTEM**—The system I use to launch my model rockets will be remotely controlled and electrically operated and will contain a launching switch that will return to "off" when released. The system will contain a removable safety interlock in series with this firing switch. When launching, all persons will remain at least 15 feet away from any model rocket when igniting engines totalling 30 N-sec of total impulse or less and at least 30 feet when igniting engines totalling more than 30 N-sec total impulse. I will use only electrical igniters which will ignite my rocket engine within one second of actuation of the launching switch.
10. **LAUNCH SAFETY**—I will not let anyone approach a model rocket on a launcher until I have made sure that the safety interlock has been removed or the battery has been disconnected from the launcher. In the event of a misfire, I will wait one minute before allowing anyone to approach the launcher.
11. **FLYING CONDITIONS**—I will launch my model rocket only when the wind is less than 20 miles per hour, and under conditions where the model will not fly into clouds, fly near aircraft in flight, or be hazardous to people or property.
12. **PRE-LAUNCH TEST**—When conducting research activities with unproven designs or methods I will, when possible, determine their reliability through pre-launch tests. I will conduct launchings of unproven designs in complete isolation from persons not participating in the actual launching.
13. **LAUNCH ANGLE**—I will not launch rockets so their flight path will carry them against targets. My launch device will be pointed within 30 degrees of vertical. I will never use model rocket engines to propel any device horizontally.
14. **RECOVERY HAZARDS**—If a model rocket becomes entangled in a power line or other dangerous place, I will not attempt to retrieve it.

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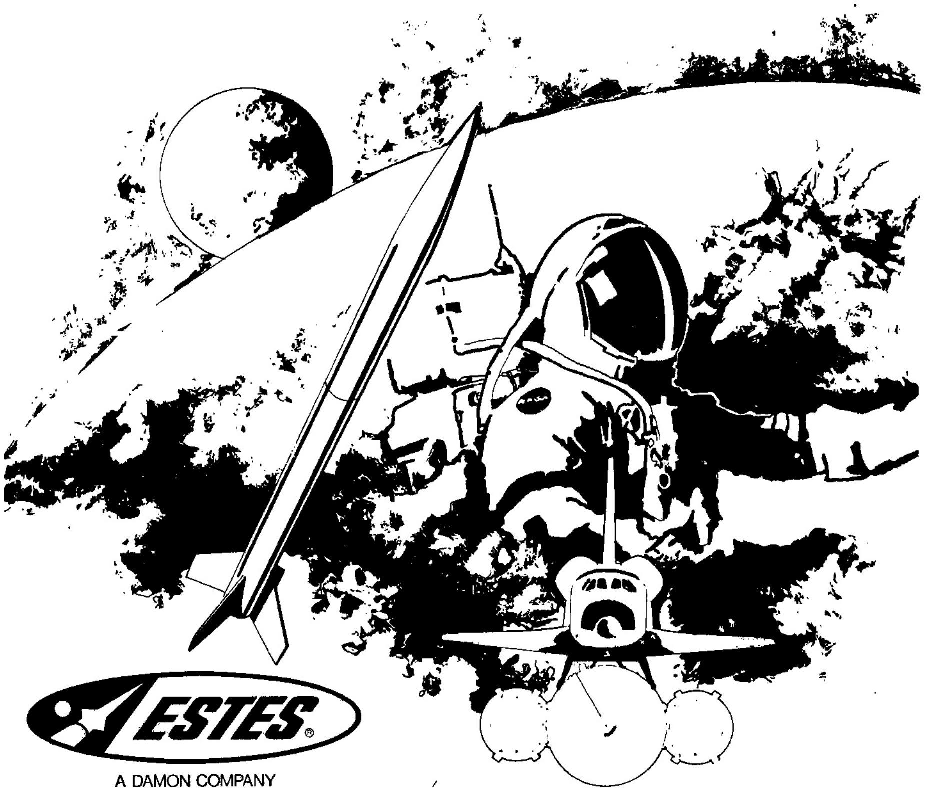
IN SEARCH OF SPACE:
INTRODUCTION TO MODEL ROCKETRY

By
Bob Cannon and Mike Dorffler



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INTRODUCTION

IN SEARCH OF SPACE: INTRODUCTION TO MODEL ROCKETRY is an interactive software tutorial which helps you learn the basics of model rocketry. The programs on both sides of this disk utilize detailed graphics and user responses to present the information and to monitor and reinforce the user's learning.

HARDWARE NEEDED

This software will operate on an Apply IIe or IIc computer with 64K or more of ROM (Read Only Memory) with one disk drive. A color monitor is needed for best enjoyment of the colorful graphics.

GETTING STARTED

Open the door of your disk drive.

Hold the IN SEARCH OF SPACE: INTRODUCTION TO MODEL ROCKETRY disk with the label side up and facing you. Carefully place the disk in the disk drive and close the door.

Turn on your computer and monitor.

Follow the instructions on the screen.

Enjoy!

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Model Rocket Engines
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Safety Code Review
Tech Tip™ -- Igniters and Igniter Installation

Each program contains important and useful information about model rocketry. Excellent graphics help you to visualize and understand what is being said. The computer will ask you questions periodically to make certain that you understand some key points.

SUMMARY OF PROGRAMS

Introduction

Explanation of Model Rocketry and instructions on use of the disk

Model Rocket Flight Profile

Explanation of the entire flight sequence from selection of engine through launch, recovery, and touchdown

Parts Of A Model Rocket

Thorough description of all parts of a model rocket and explanation of the functions of each

Model Rocket Engines

Description of each part of the model rocket engine and its function. Explanation of the various sizes of model rocket engines.

Model Rocket Engine Classification

The coding system to state the performance characteristics of model rocket engines explained

Safety Code

The new National Association of Rocketry/Hobby Industry of America Model Rocketry Safety Code.

Safety Code Review

Self-test on the National Association of Rocketry Model Rocketry Safety Code. A passing score entitles you to a bonus--a special message from Tech Tip™, the lovable character from the Estes catalog about two-stage model rockets.

Tech Tip™ on Igniters and Igniter Installation